

WBS 6.2.1.4: BNL Modules Report

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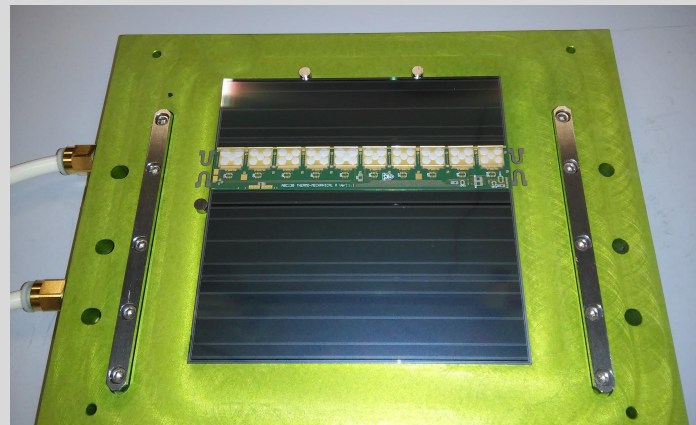
BNL module deliverables

Layer	Radius	staves per layer	# of modules	# of hybrids	# of ABC130	# of channels	m²	
1/2 barrel!	0	405	28	784	1568	15680	4,01	7,45
	1	562	40	1120	2240	22400	5,73	10,53
	2	762	56	1568	1568	15680	4,01	14,75
	3	1000	72	2016	2016	20160	5,16	18,96
Total full barrel		392	10976	14784	147840	37,85	103,43	

- 10976 modules + 10% (?)
- Equal split US and UK
- Equal split in US between LBNL, UCSC and BNL
- BNL will have to produce 700 short modules, 1320 long modules

BNL hybrid production

- 700 short and 1320 long modules to do
- Probably can use the existing module tooling
 - Maybe mechanically modified
 - Need replacement for Epolite
 - Use glue dispenser instead of stencils
- Have to do (max) 20 short modules per week
 - 5 toolsets for 5 modules per day → OK
 - 5120 chip to sensor bonding wires
 - Minimum of 1 wire bond per sec, 2 per sec likely → 1 to 2 hours per module
 - 1 bond/sec is too slow...
- Burn in, thermal cycle of 3 days per 10 modules



Construction feasible but tight (bonding!), QA should be extensive

BNL module gluing and bonding

1 DAQload got assembled

2 readout chips (1 by accident, ahum...)

1 HCC chip + HCC fix

1 mini-sensor (cut edges are too large)

LH hybrid kapton taped to test board

Waiting for wire bonding

Need to consolidate programs

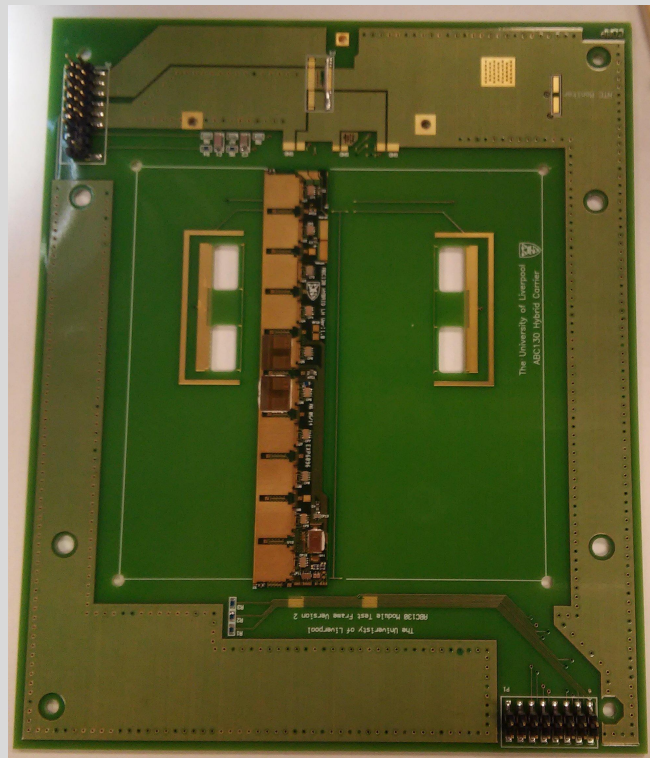
Need formal commitment Instrumentation

2 more DAQloads in the pipeline

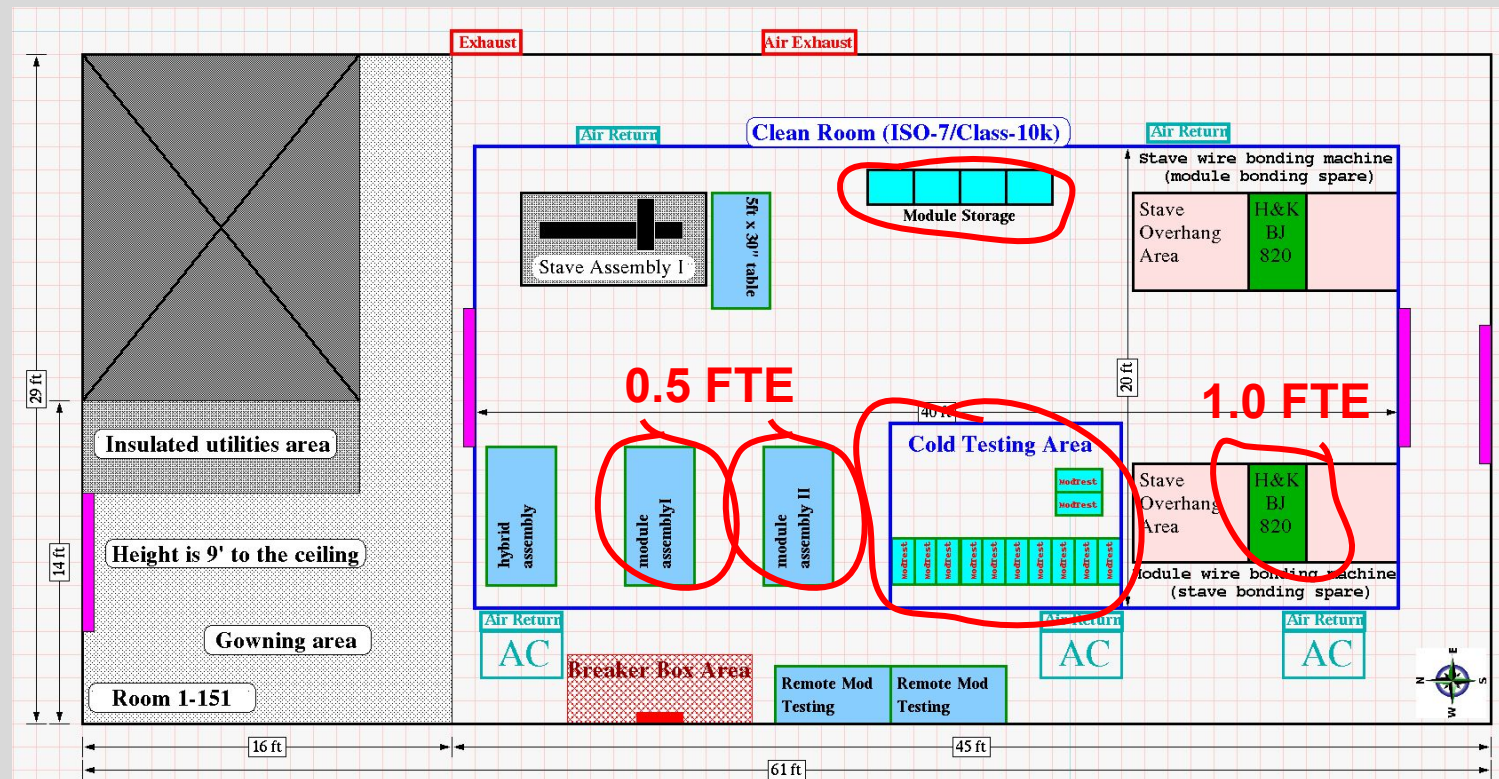
Waiting for bonding results first

Will assemble more Thermo-Mech modules

Sorry, too busy with infrastructure



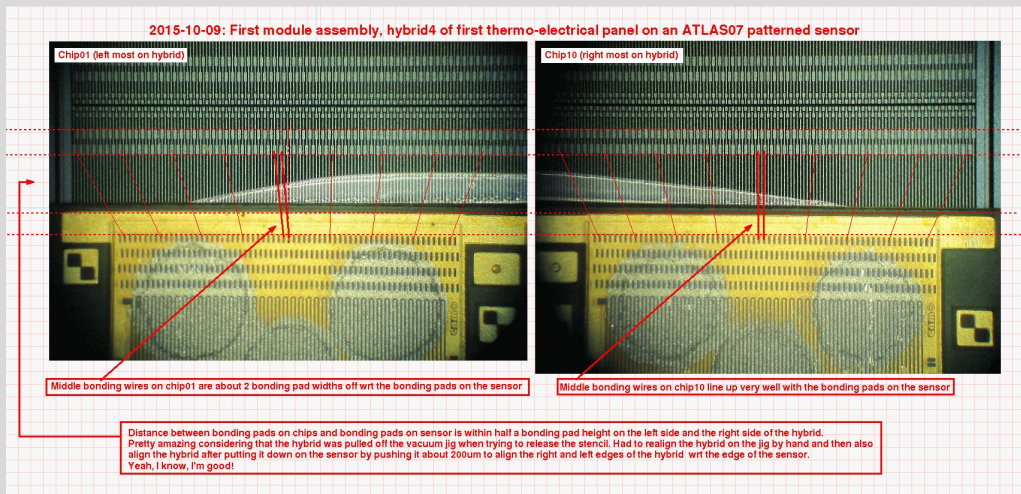
BNL module production resources



Resources will be discussed in stave assembly session

BNL module schedule

- Glue testing mostly right now, alignment OK, gluing is a hassle
- We have material for another 3 Thermo-Mech hybrid panels
- We have 12 ATLAS12 mechanical dummy sensors
- Should assemble, at least, 10 Thermo-Mechanical before October
 - These should be used with the Thermo-Mech stove
- Electrical hybrid panels should be available end of May
- When do we get electrical ABC130s and HCCs again?



- **Gerrit is module deliverable manager**
- **Gerrit is BNL module contact person (I can shout at myself)**
- **Information exchange between the 3 hybrid production sites, How?**

For example: Shared Google Sheet for Barrel Module Components

BNL Received DAQload material

- Received 7 hybrids and 6 ABC130s from UK
- Have been stuffed with passives and HCC fixes
- 4 stuffed ones back to UK
- HCCs and ATLAS12 mini-sensors in hand
- Assembled 1 DAQload, waiting for bonding
 - Hybrid PCBs are thicker, i.e. standard tools need to be shimmed
 - Pickup tool hits capacitor array with chip tray distance bar
 - Usual issues with glue stencils
 - Finally put chips down by hand
- ITKdaq software seems to work on new DAQ laptop (builds, etc.)
 - Trying to readout original RAL DAQload through ATLYS
 - Something seems to be wrong, missing HCC fix?